

**HCV heavy chain seq ID 1 comparison with the sequence of**  
**the different CBH antibodies**

CDR 1

10203040506074

heavy seq ID 1

CBH 2 heavy

CBH 4B

CBH 4D

CBH 4G

CBH 4E

CBH 4C

CBH 4E

CBH 11

CBH 17C

Consensus

CDR 3

59708090100110120132

heavy seq ID 1

CBH 2 heavy

CBH 4B

CBH 4D

CBH 4G

CBH 4E

CBH 4C

CBH 4E

CBH 11

CBH 17C

Consensus

Note: Identical sequence is yellow background and red foreground  
 Conservative sequence is light green background and blue foreground



**HCV heavy chain seq ID 3 comparison with the sequence of  
the different CBH antibodies**

CDR 1

CDR 2

heavy seq ID 3

CBH 2 heavy

CBH 4B

CBH 4D

CBH 4G

CBH 5

CBH 7

CBH 8C

CBH 8E

CBH 11

CBH 17C

Consensus

CDR 3

heavy seq ID 3

CBH 2 heavy

CBH 4B

CBH 4D

CBH 4G

CBH 5

CBH 7

CBH 8C

CBH 8E

CBH 11

CBH 17C

Consensus

Note: Identical sequence is yellow background and red foreground  
Conservative sequence is light green background and blue foreground

HCv heavy chain seq ID 4 comparison with the sequence of the different CBH antibodies

[illegible]

Note: Identical sequence is yellow background and red foreground  
Conservative sequence is light green background and blue foreground

**HCV heavy chain seq ID 1 CDR region comparison with the CDR  
sequence of the different CBH antibodies**

	(1)	1	8
HCV heavy seq ID 1 CDR 1(1)	---	GHVTT	
CBH 2 heavy CDR 1(1)	---	TYWIG	
CBH 4B heavy CDR 1(1)	---	TYGIT	
CBH 4D heavy CDR 1(1)	----	YS--	
CBH 4G heavy CDR 1(1)	NSAS----		
CBH 5 heavy CDR 1(1)	---	NFIS-	
CBH 7 heavy CDR 1(1)	---	NYALS	
CBH 8C heavy CDR 1(1)	---	SFFW-	
CBH 8E heavy CDR 1(1)	---	SQPIT	
CBH 11 heavy CDR 1(1)	---	IYS--	
CBH 17 heavy CDR 1(1)	---	GSAIH---	
Consensus(1)		Y	

	(1)	1	10	22
HCV heavy seq ID 1 CDR2	(1)	-ESIPFGSANYAQNYAQKFRD		
CBH 2 heavy CDR 2	(1)	-VINPGDSETRYSSSFEG----		
CBH 4B heavy CDR 2	(1)	-GIVPLFDRPNYAQKFQD----		
CBH 4D heavy CDR 2	(1)	---GIIFDRENYAQKFQG----		
CBH 4G heavy CDR 2	(1)	--IIPIFATTYYAQRLQG----		
CBH 5 heavy CDR 2	(1)	-GVVPVFGGGSYPQKFQG----		
CBH 7 heavy CDR 2	(1)	--EITPFGTEKYAQKFQG----		
CBH 8C heavy CDR 2	(1)	--YMSDTGNTNSSLKT-----		
CBH 8E heavy CDR 2	(1)	---FIPIFTTNYAQKFQG----		
CBH 11 heavy CDR 2	(1)	--IIPFTAKSQFQG-----		
CBH 17C heavy CDR 2	(1)	IRSSSHNYATEYPVSVRG----		
Consensus (1)		IP FG TNYAQKFQG		

	(1)	1	10	21
HCV heavy seq ID 1 CDR 3	(1)	-DPFRYCSAGRCYPGFFQQ--		
CBH 2 heavy CDR 3	(1)	---GFSGRQWLVPVLYSDSW--		
CBH 4B heavy CDR 3	(1)	----EADIVVGSSSYFDS---		
CBH 4D heavy CDR 3	(1)	-DSGDFGAVIIGNHYYYGMDV		
CBH 4G heavy CDR 3	(1)	--ATGQGTELGHSYXXYAMDV		
CBH 5 heavy CDR 3	(1)	PHGDSSGIYRRPLDY-----		
CBH 7 heavy CDR 3	(1)	----RGYIYGSPFDY-----		
CBH 8C heavy CDR 3	(1)	----GLIAARLLDYW-----		
CBH 8E heavy CDR 3	(1)	-DWLGSCRGGSCYSAFDI---		
CBH 11 heavy CDR 3	(1)	--VPGSG----TYAYFDY---		
CBH 17C heavy CDR 3	(1)	----PSGLVGQLGHAFFP---		
Consensus (1)		SGI	YF	

HCV heavy chain seq ID 2 CDR region comparison with the CDR  
sequence of the different CBH antibodies

	(1)	1	8
HCV heavy seq ID 2 CDR 1 (1)	---	RYTIQ	
CBH 2 heavy CDR 1 (1)	---	TYWIG	
CBH 4B heavy CDR 1 (1)	---	TYGIT	
CBH 4D heavy CDR 1 (1)	----	YS--	
CBH 4G heavy CDR 1 (1)	----	NSAS----	
CBH 5 heavy CDR 1 (1)	---	NFIS-	
CBH 7 heavy CDR 1 (1)	---	NYALS	
CBH 8C heavy CDR 1 (1)	---	SFFW-	
CBH 8E heavy CDR 1 (1)	---	SQPII	
CBH 11 heavy CDR 1 (1)	---	IYS--	
CBH 17 heavy CDR 1 (1)	---	GSATH---	
Consensus (1)		Y	

	(1)	1	18
HCV heavy seq ID 2 CDR 2 (1)	-	NIIPVYNIPNYAQKFQ	
CBH 2 heavy CDR 2 (1)	-	VINPGDSEIRYSSSFEG	
CBH 4B heavy CDR 2 (1)	-	GIVPLFDRPNYAQKFQ	
CBH 4D heavy CDR 2 (1)	---	GIIFDRENYAQKFQ	
CBH 4G heavy CDR 2 (1)	--	IIPIFATYYAQRLO	
CBH 5 heavy CDR 2 (1)	-	GVVPVFGGSSYPQKFQ	
CBH 7 heavy CDR 2 (1)	--	EITPFGTEKYAQKFQ	
CBH 8C heavy CDR 2 (1)	--	YMSDTGNTNSSLKT--	
CBH 8E heavy CDR 2 (1)	---	FIPIFTTNYAQKFQ	
CBH 11 heavy CDR 2 (1)	--	IIPFTAKSQFQ----	
CBH 17C heavy CDR 2 (1)	-	IRSSSHNYATEYPVSVRG	
Consensus (1)		IIP F TNYAQKFQ	

	(1)	1	10	21
HCV heavy seq ID 2 CDR 3 (1)	-	VVIPNAIRHTMGYYFDY---		
CBH 2 heavy CDR 3 (1)	---	GFSGRQWLVPYSDSW--		
CBH 4B heavy CDR 3 (1)	----	EADIVVGSSYFDS---		
CBH 4D heavy CDR 3 (1)	-	DSGDFGAVIIGNHYYYGMDV		
CBH 4G heavy CDR 3 (1)	--	ATGQGIELHGSYYYAMDV		
CBH 5 heavy CDR 3 (1)	-	PHGDSSGIYRRPLDY-----		
CBH 7 heavy CDR 3 (1)	----	RGYIYGSPFDY-----		
CBH 8C heavy CDR 3 (1)	-----	GLIAARLLDYW-----		
CBH 8E heavy CDR 3 (1)	-	DWLGSCRGGSCYSAFDI---		
CBH 11 heavy CDR 3 (1)	--	VPGSG-----TYAYFDY---		
CBH 17C heavy CDR 3 (1)	----	PSGLVGQLGHAFEP---		
Consensus (1)		SGI	YFD	

HCV heavy chain seq ID 3 CDR region comparison with the CDR  
sequence of the different CBH antibodies

	(1)	1	9
HCV heavy seq ID 3 CDR 1(1)	GHVIS----		
CBH 2 heavy CDR 1(1)	----	TYWIG	
CBH 4B heavy CDR 1(1)	----	TYGIT	
CBH 4D heavy CDR 1(1)	-----	YS--	
CBH 4G heavy CDR 1(1)	-NSAS-----		
CBH 5 heavy CDR 1(1)	-NFIS-----		
CBH 7 heavy CDR 1(1)	----	NYALS	
CBH 8C heavy CDR 1(1)	----	SFFW-	
CBH 8E heavy CDR 1(1)	----	SQPIT	
CBH 11 heavy CDR 1(1)	----	IYS--	
CBH 17 heavy CDR 1(1)	-GSAIH---		
Consensus(1)		SY	

	(1)	1	18
HCV heavy seq ID 3 CDR 2 (1)	-GSISFFGT	SN	SAQKFQG
CBH 2 heavy CDR 2 (1)	-VINPGDSE	TRYSSSFEG	
CBH 4B heavy CDR 2 (1)	-GIVPLFDR	PNYAQKFQD	
CBH 4D heavy CDR 2 (1)	---	GIIFDRENYAQKFQG	
CBH 4G heavy CDR 2 (1)	--	IIPIFATTYYAQRLQG	
CBH 5 heavy CDR 2 (1)	-GVVPVFGG	GSYPQKFQG	
CBH 7 heavy CDR 2 (1)	--	EITPFGTEKYAQKFQG	
CBH 8C heavy CDR 2 (1)	--	YMSDTGNTNSSLKT--	
CBH 8E heavy CDR 2 (1)	---	FIPIFTTINYAQKFQG	
CBH 11 heavy CDR 2 (1)	--	IIPFTAKSQFQG----	
CBH 17C heavy CDR 2 (1)	IRSSSHNYATE	YPVSVRG	
Consensus (1)		I	FG TNYAQKFQG

	(1)	1	10	21
HCV heavy seq ID 3 CDR 3 (1)	-DPPRFCSGG	NCYPGFFQ		
CBH 2 heavy CDR 3 (1)	----	GFSGRQWL	PLYSDSW--	
CBH 4B heavy CDR 3 (1)	----	EADIVVGG	SSYFDS---	
CBH 4D heavy CDR 3 (1)	-DSGDFGAVI	IGNHYYGMDV		
CBH 4G heavy CDR 3 (1)	--	ATGQGIELHGS	YYYYYAMDV	
CBH 5 heavy CDR 3 (1)	PHGDSSGI	YRRPLDY-----		
CBH 7 heavy CDR 3 (1)	----	RGYIYGSPFDY-----		
CBH 8C heavy CDR 3 (1)	-----	GLIAARLLDYW-----		
CBH 8E heavy CDR 3 (1)	-DWLGSCRG	GGSCYSAFDI---		
CBH 11 heavy CDR 3 (1)	--	VPGSG-----	TYAYFDY---	
CBH 17C heavy CDR 3 (1)	----	PSGLVGLGHAFEP---		
Consensus (1)		SGI	YF	

HCV heavy chain seq ID 4 CDR region comparison with the CDR  
sequence of the different CBH antibodies

	(1)	1	8
HCV heavy seq ID 4 CDR 1 (1)	---	TYGMH	
CBH 2 heavy CDR 1 (1)	---	TYWIG	
CBH 4B heavy CDR 1 (1)	---	TYGIT	
CBH 4D heavy CDR 1 (1)	---	YS--	
CBH 4G heavy CDR 1 (1)	---	NSAS----	
CBH 5 heavy CDR 1 (1)	---	NFIS----	
CBH 7 heavy CDR 1 (1)	---	NYALS	
CBH 8C heavy CDR 1 (1)	---	SFFW-	
CBH 8E heavy CDR 1 (1)	---	SQPIIT	
CBH 11 heavy CDR 1 (1)	---	IYS--	
CBH 17 heavy CDR 1 (1)	---	GSATH---	
Consensus (1)		SY	

	(1)	1	18
HCV heavy seq ID 4 CDR 2 (1)	-	GISFDG	SNQYYADSVK
CBH 2 heavy CDR 2 (1)	-	VINPGD	SETRYSSSFEG
CBH 4B heavy CDR 2 (1)	-	GIVPLF	DREPNYAQKFQD
CBH 4D heavy CDR 2 (1)	---	GIIFDR	ENYAQKFQ
CBH 4G heavy CDR 2 (1)	---	IIPIFAT	TYAQRLO
CBH 5 heavy CDR 2 (1)	-	GVVPVF	GGGSPQKFQ
CBH 7 heavy CDR 2 (1)	-	EITPFG	TEKYAQKFQ
CBH 8C heavy CDR 2 (1)	-	YMSDTG	NTINSSLKT--
CBH 8E heavy CDR 2 (1)	---	FIPIFT	TINYAQKFQ
CBH 11 heavy CDR 2 (1)	---	IIPFTA	KSQFQ----
CBH 17C heavy CDR 2 (1)	-	IRSSSH	NYATEYPVSVRG
Consensus (1)		II	T YAQKFQ

	(1)	1	10	21
HCV heavy seq ID 4 CDR 3 (1)	---	EGSPFG	SIKGRYYLEN--	
CBH 2 heavy CDR 3 (1)	---	GFSGRQ	WLVLPLYS	DSW--
CBH 4B heavy CDR 3 (1)	---	EADIVV	GGSSYFDS--	
CBH 4D heavy CDR 3 (1)	-	DSGDFG	AVIIGNHY	YGM
CBH 4G heavy CDR 3 (1)	---	ATGQGI	ELHGSYYY	AM
CBH 5 heavy CDR 3 (1)	-	PHGDSS	GIYRRPLDY-----	
CBH 7 heavy CDR 3 (1)	---	RGYIYG	SPFDY-----	
CBH 8C heavy CDR 3 (1)	---	GLIAAR	LLDYW-----	
CBH 8E heavy CDR 3 (1)	-	DWLGSC	RGGS	CYSAFDI---
CBH 11 heavy CDR 3 (1)	---	VPGS	---	TYAYFDY---
CBH 17C heavy CDR 3 (1)	---	PSGLVG	QLGHAFEP---	
Consensus (1)		SGI		YF



**Comparison of deduced amino acid sequences  
of CBHs light chain genes with ID 5**

		CDR 1					CDR 2
		1	10	20	30	40	59
light chain seq ID 5	(1)	-AELTQSPGTL SLS PGERATL SCRASQSVSSN--					YLA WYQQRPGQAPRL IITYGASSRAT
CBH 2 light	(1)	EIVLTQSPGTL -LSPGERATL SCRASQSVLC---					YLA WYKQKPGQAPRL IITYGVSRAT
CBH 4 B light	(1)	--ESVTQSGT LSLSPGERATL SCRASQSVSST--					YVA WYQKPGQAPR -ILYDASIRAT
CBH 4 D light	(1)	-QSALTQPA SVSGSPGQS ITIT SCTGTSSDIGGYNFVSWYQY					PDKAFV--VIYEVSKRPS
CBH 4 G light	(1)	DIQMTQSPSSL SASVGDRTITCRASQGDIN---					FLA WYQKPGKVPKLLITYAASSLQS
CBH 5 light	(1)	DIQMTQSPSTL SASG-DRVAITCRASQSSWL----					AWYQKPGAPL--ITYKASNVQD
CBH 7 light	(1)	DVIMTQSPSSL SASVGDRTITCRSQSISF----					LNWYQKPGKAP-LEISAASSLQS
CBH 8 C light	(1)	EIVLTQSPATL SLPGERATL SCRASQSI SR--					YLA WYQKPGQAPRL IITYFDTSNRAT
CBH 8 E light	(1)	DIQMTQSPSSL SVG--DVITTCRASQITNR--					YLNWYQKPGKAPKLLITYAASSLQS
CBH 11 light	(1)	DIQMTQSPSTL -SSVGDRTITCRASQ SINL---					WLA WYQKPGQAPRL IITYKTSTSES
CBH 17 light	(1)	--SYVLTQTFVSVAPGKTARITCREPNIGTNS---					VHWFQQRPGQAPVSIYYDDR--PS
Consensus	(1)	AELTQSPGTL SLS PGERATL SCRASQSVSSN					YLA WYQQRPGQAPRL IITYGASSRAT

		CDR 3						
		(60)	60	70	80	90	100	112
light chain seq ID 5	(57)	GIPDRFSGSGSGTDFTLTISRLPEPDEFAVYYCQLYG--						NSRWTFSGGTKVEIK
CBH 2 light	(55)	GIPDRFSGSGSGTDFTLTISRLPEDEA-YYCQYQY--						TSPFTFG-----
CBH 4 B light	(55)	GVPDRFSGSGSGTDFTLTISRLPEDEFAVYYCQYQY--						GSPFFFG-----
CBH 4 D light	(57)	GVSNRFSAS-SGNTASLTISGLQAKDEADYYCSSYTNNITFV						IFGG-----
CBH 4 G light	(57)	GVPSRFSGSGSGTDFTLTISRLPEPDEFAVYYCQKYN--						SAPFTFGP-----
CBH 5 light	(52)	GV---SRPSGSGSGTFTLTIS-LQPDFAVYYCQYYN--						NFSGTFGQ-----
CBH 7 light	(55)	GV-SRPSGSGSGTFTLTISRLPEPDEFAVYYCQORSNWPP						ALITFG-----
CBH 8 C light	(57)	GIPARFSGSGSGTDFTLTISRLPEPDEFAVYYCQORSNWPP						ALITFG-----
CBH 8 E light	(55)	GV-SRPSGSGSGTDFTLTISRLPEPDEFAVYYCQORSNWPP						ALITFG-----
CBH 11 light	(54)	GVPSRPSGS-GSTFTLTISRLPEPDEFAVYYCQHSY--						SSSWTFGQ-----
CBH 17 light	(53)	GIPERFGSA-SGDTATLTISRVEVGDEADYSCQVWNINNNH						RGSSEL-----
Consensus	(60)	GIPDRFSGSGSGTDFTLTISRLPEPDEFAVYYCQLYG						NSRWTFSGGTKVEIK

**Note:**

Identical sequence: yellow background and red foreground.

Conservative sequence: light green background and blue foreground

**Comparison of deduced amino acid sequences  
of CBHs Light chain genes with ID 6**

		CDR 1					CDR 2	
		10	20	30	40	50		
light chain seq ID 6	(1)	-AELTQSPATLSLSPGERATLSCRASQ---	SVN	KYLAWYQOKPGQAPRLI	ITYDASNRAT			
CBH 2 light	(1)	EIVLTQSPGTL-LSPGERATLSCRASQ---	RVL	GYLAWYKOKPGQAPRLI	ITYGVS-RAT			
CBH 4 B light	(1)	--ESVTQSGTSLSPGERATLSCRASQS---	VSST	YVAWYQOKPGQAPR-	ITYDASIRAT			
CBH 4 D light	(1)	-QSALTQPASVSGSPGQSTITISCTGTSSDIGGYNFVSWYQYFDKAPV---	VI	YEVSKRPS				
CBH 4 G light	(1)	DIQMTQSPSSLASVGDRTITCRASQ---	GIDN	FLAWYQOKPGKVPKLI	ITYAASSLOS			
CBH 5 light	(1)	DIQMTQSPSTLSASG-DRVAITCRA----	SQSS	WLAWYQOKPGAPL-	ITYKASNVQD			
CBH 7 light	(1)	DVLTQSPSSLASVGDRTITCRS-Q---	SIS	FLNWKYQOKPGKAP-	LITSAASSLOS			
CBH 8 C light	(1)	EIVLTQSPATLSLSPGERATLSCRASQ---	SIS	RYLAWYQOKPGQAPRLI	ITYDTSNRAT			
CBH 8 E light	(1)	DIQMTQSPSSLSSVG--DVTITCRASQ---	TIN	RYLNWKYQOKPGKAPKLI	ITYAASSLOS			
CBH 11 light	(1)	DIQMTQSPSTL-SSVGDRTITCRASQ---	SIN	LWLAWYQOP--	KAPELLIYKTSTSES			
CBH 17 light	(1)	--SYVLTQTPVSVAPGKTARITCREPN---	IGT	NSVHWQQRPGQAPVSI	ITYDDR--PS			
Consensus	(1)	AELTQSPATLSLSPGERATLSCRASQ	SVN	KYLAWYQOKPGQAPRLI	ITYDASNRAT			

  

		CDR 3				
		60	70	80	90	100
light chain seq ID 6	(56)	GIPARFSGSGSGTDFTLTISNLEPEDFAVYYCQQR---	SDW	VTFGGG	TKVEIK	
CBH 2 light	(55)	GIPDRFSGSGSGTDFTLTISRLEPEDFA--YVCQYQ---	TSP	FTFG		
CBH 4 B light	(55)	GVPDRFSGGSGSGTDFTLTISRLEPEDFAVYYCQYQ---	GSP	FFFG		
CBH 4 D light	(57)	GVSNRFSAS-SGNTASLTISGLQAEADYYCSSYTNNITPVI	TFG			
CBH 4 G light	(57)	GVPSRFSGSGSGTDFTLTISSLQPEDVATYYCQKYN--	SAP	FTFGP		
CBH 5 light	(52)	GV---SRPSGSGTFTLTIS-LQPDDEFATYYCQYQYN--	NFS	GTFGQ		
CBH 7 light	(55)	GV-SRPSGSGSGTFTLTISSLQPEDFATYYCQQSY--	SPL	LTFG		
CBH 8 C light	(57)	GIPARFSGSGSGTDFTLTISNLEPEDFAVYYCQQRSNWPPAL	TFG			
CBH 8 E light	(55)	GV-SRFSGSGSGTDFTLTISLQPDVATYYCQQSFSTSAM	YTFG			
CBH 11 light	(54)	GVPSRPSGS-GSTFTLTISLQPDVATYYCQHYS--	SSS	WTFGQ		
CBH 17 light	(53)	GIPERFGSA-SGDTATLTISRVEVGDEADYSCQVWNNINNH	RGSSEL			
Consensus	(60)	GIPARFSGSGSGTDFTLTISNLEPEDFAVYYCQQR	SDW	VTFGGG	TKVEIK	

**Note:**

Identical sequence: yellow background and red foreground.

Conservative sequence: light green background and blue foreground

### Comparison of deduced amino acid sequences of CBHs Light chain genes with ID 7

		CDR 1					CDR 2
		1	10	20	30	40	58
light chain seq ID 7	(1)	-AELTQSPGTLTSLSPGERATLSCGASQSVRSNY-LAWYQOKPGQAPRLITYGVSSRAT					
CBH 2 light	(1)	EIVLTQSPGTL-LSPGERATLSCRASQSVLG--YLAWYQOKPGQAPRLITYGVSS-RAT					
CBH 4 B light	(1)	--ESVTQSGTILSLSPGERATLSCRASQSVSSTY-VAWYQOKPGQAP-RLITYDASIRAT					
CBH 4 D light	(1)	-QSALTQSPASVSGSPGQSTTISCTGTSSDIGYNFVSWYQYDPKAP-VITYEVSKRPS					
CBH 4 G light	(1)	DIQMTQSPSSLSASVGDRTITCRASQSIDN-F-LAWYQOKPGKVPKLLITYAASSLOS					
CBH 5 light	(1)	DIQMTQSPSTLSASG-DRVAITCRASQSSWL---AWYQOKPGAPL-LLITYKASNVD					
CBH 7 light	(1)	DVLMTQSPSSLSASVGDRTITCRSQSISF---LNWYQOKPGKAP-LLITYAASSLOS					
CBH 8 C light	(1)	EIVLTQSPATLTLSPGERATLSCRASQISIR-Y-LAWYQOKPGQAPRLITYFDTNIRAT					
CBH 8 E light	(1)	DIQMTQSPSSLSVSG--DVTITCRASQTINR-Y-LNWYQOKPGKAPKLLITYAASSLOS					
CBH 11 light	(1)	DIQMTQSPSTL-SSVGDRTITCRASQINL--WLAWYQOK--KAPLLITYKTSTSES					
CBH 17 light	(1)	--SYVLTQTFVSVAPGKTARITCREPNIGTN--SVHWFOQRPGQAPVSLITYDDR--PS					
Consensus	(1)	AELTQSPGTLTSLSPGERATLSCGASQSVRSNY LAWYQOKPGQAPRLITYGVSSRAT					

  

		CDR 3					
		(59) 59	70	80	90	109	
light chain seq ID 7	(57)	GIPDRFSGSGSGTDFTLTISRLEPEDFAVYYCQYGGSPRTFGQGTKLEIK					
CBH 2 light	(55)	GIPDRFSGSGSGTDFTLTISRLEPEDFA-YYCQYGTSPFTFG-----					
CBH 4 B light	(55)	GVDRFSGSGSGTDFTLTISRLEPEDFAVYYCQYGGSPFTFG-----					
CBH 4 D light	(57)	GVSNR-FSASSNTASLTISGLQAEDEADYYCSSYTNNTIPVIFGG-----					
CBH 4 G light	(57)	GVPSRFSGSGSGTDFTLTISSLQPEDVATYYCQYNSAPFTFGP-----					
CBH 5 light	(52)	GV--S-RPSGSGTFTLTIS-LQDDFATYYCQYNNFSGTFEGQ-----					
CBH 7 light	(55)	GV-SRPSGSGSGTFTLTISLQPEDFATYYCQ--SYSPLLIFGG-----					
CBH 8 C light	(57)	GIPARFSGSGSGTDFTLTISNLEPEDFAVYYCQQRSNWPPALIFGG-----					
CBH 8 E light	(55)	GV-SRPSGSGSGTDFTLTISLQPEDFATYYCQQSFSTSAMVIFGQ-----					
CBH 11 light	(54)	GVPSRPSGSGS-TEFTLTISLQPEDFATYYCQHYSSSSWTFEGQ-----					
CBH 17 light	(53)	GIPER-FGSASGDTATLTISRVEVGDEADYSCQVWNTNINHRGSSSEL----					
Consensus	(59)	GIPDRFSGSGSGTDFTLTISRLEPEDFAVYYCQYGGSPRTFGQGTKLEIK					

**Note:**

Identical sequence: yellow background and red foreground.

Conservative sequence: light green background and blue foreground

### Comparison of deduced amino acid sequences of CBHs Light chain genes with ID 8

		CDR 1					CDR 2
	(1)	1	10	20	30	40	59
light chain seq ID 8	(1)	-AELTQSPATLSVSPGERASLSCRASQ---SVGNNLAWYQOKPGQAPRLITYGGNTRAT					
CBH 2 light	(1)	EIVLTQSPGTL-LSPGERATLSCRASQ---RVLGYLAWYQOKPGQAPRLITYGVS-RAT					
CBH 4 B light	(1)	--ESVTQSGTSLSPGERATLSCRASQ--VSSTYVAWYQOKPGQAPR-LLYDASIRAT					
CBH 4 D light	(1)	-QSALTQPASVSGSPGQSITISCTGTSSDIGGYNFVSWYQYFDKAFV--VIYEVSKRPS					
CBH 4 G light	(1)	DIQMTQSPSSLASVGDRTITCRASQ---GIDNFLAWYQOKPGKVPKLLITYAASSLQS					
CBH 5 light	(1)	DIQMTQSPSTLSASG-DRVAITCRA----SQSSWLAWYQOKPGAPL--LIYKASNVQD					
CBH 7 light	(1)	DVLMTQSPSSLASVGDRTITCRS-Q---SISSEFLNWWYQOKPGKAP-LIISAASSLQS					
CBH 8 C light	(1)	EIVLTQSPATLSLSPGERATLSCRASQ---SISRYLAWYQOKPGQAPRLIIFDTSNRAT					
CBH 8 E light	(1)	DIQMTQSPSSLSSVG--DVTITCRASQ---SINLWLAWYQOP--KAPELLITYKTSTSES					
CBH 11 light	(1)	DIQMTQSPSTL-SSVGDRTITCRASQ---SINLWLAWYQOP--KAPELLITYKTSTSES					
CBH 17 light	(1)	--SYVLTQIPVSVAPGKTARITCREFN---IGTNSVHWFOORPGQAPVSTIYDDR--PS					
Consensus	(1)	AELTQSPATLSVSPGERASLSCRASQ SVGNNLAWYQOKPGQAPRLITYGGNTRAT					

  

		CDR 3				
	(60)	60	70	80	90	110
light chain seq ID 8	(56)	GTPDRFSGSGSGTEFTLTISSLQSEDFAVYFCQHYSTWPLTFGGGKVEFK				
CBH 2 light	(55)	GIPDRFSGSGSGTDFTLTISRLEPEDFA-YYCQYGTSPFTFG-----				
CBH 4 B light	(55)	GVPRFSGSGSGTDFTLTISRLEPEDFAVYYCQYGGSPFTFG-----				
CBH 4 D light	(57)	GVSNR-FSASSGNTASLTISGLQAEDEADYYCSSYTNNTIPVTFGG----				
CBH 4 G light	(57)	GVPSRFSGSGSGTDFTLTISSLQPEDVATYYCQKYNAPFTFGP-----				
CBH 5 light	(52)	GV--S-RPSGSGSGTFTLTIS-LQDDFATYYCQYNNFSGTFGQ-----				
CBH 7 light	(55)	GV-SRPSGSGSGTSFTLTISSLQPEDFATYYCQYSYSPLLTFGG-----				
CBH 8 C light	(57)	GIPARFSGSGSGTDFTLTISNLEPEDFAVYYCQQRSNWPPALTFGG----				
CBH 8 E light	(55)	GV-SRPSGSGSGTDFTLTISSLQPD-DFATYYCQSEFSTSAMVTFGQ----				
CBH 11 light	(54)	GVPSRPSGSGS-TEFTLTISSLQPD-DFATYYCQHYSSSSWTFGQ-----				
CBH 17 light	(53)	GIPER-FGSASGDTATLTISRVEVGDEADYSCQVWNNNTNNHRGSSEL----				
Consensus	(60)	GTPDRFSGSGSGTEFTLTISSLQSEDFAVYFCQHYSTWPLTFGGGKVEFK				

**Note:**

Identical sequence: yellow background and red foreground.

Conservative sequence: light green background and blue foreground.

**Comparison of deduced amino acid sequences  
of CBHs light chain genes with ID 5**

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**CDR 1**

	(1)	<u>1</u>	<u>14</u>
light chain seq ID 5 CDR 1	(1)	-RASQSVSSNYLA-	
CBH 2 light CDR 1	(1)	-RASQRVLGYLE--	
CBH 4B light CDR 1	(1)	-RASQSVSSITYVA-	
CBH 4D light CDR 1	(1)	TGTSSDIGGYNFVS	
CBH 4G light CDR 1	(1)	-RASQGIDNFLA--	
CBH 5 light CDR 1	(1)	-RASQSSWLA----	
CBH 7 light CDR 1	(1)	--RSQSISSEFLN--	
CBH 8C light CDR 1	(1)	-RASQSISRYLA--	
CBH 8E light CDR 1	(1)	-RASQTINRYLN--	
CBH 11 light CDR 1	(1)	-RASQSINLWLA--	
CBH 17 light CDR 1	(1)	--REPNIQTNSVH-	
Consensus	(1)	RASQSVSSNYLA	

**CDR 2**

	(1)	<u>1</u>	<u>9</u>
light chain seq ID 5 CDR 2	(1)	-YGASSRAT	
CBH 2 light CDR 2	(1)	---GVSRAT	
CBH 4B light CDR 2	(1)	--DASIRAT	
CBH 4D light CDR 2	(1)	--EVSKRPS	
CBH 4G light CDR 2	(1)	--AASSLQS	
CBH 5 light CDR 1	(1)	RASQSSWLA	
CBH 7 light CDR 2	(1)	--AASSLQS	
CBH 8C light CDR 2	(1)	--DTSNRAT	
CBH 8E light CDR 2	(1)	--AASSLQS	
CBH 11 light CDR 2	(1)	--KTSTSES	
CBH 17 light CDR 2	(1)	---YDDRPS	
Consensus	(1)	YGASSRAT	

**CDR 3**

	(1)	<u>1</u>	<u>17</u>
light chain seq ID 5 CDR 3	(1)	--QLYGNSRWT-----	
CBH 2 light CDR 3	(1)	--QQYGTSPFTFG----	
CBH 4B light CDR 3	(1)	--QQYGGSPFFGG----	
CBH 4D light CDR 3	(1)	SSYTNITPVIFGG----	
CBH 4G light CDR 3	(1)	--QKYNAPFTFGP----	
CBH 5 light CDR 3	(1)	--QYYNFGSTFGQ----	
CBH 7 light CDR 3	(1)	--QQSYSPLLTFGG----	
CBH 8C light CDR 3	(1)	QQRSNWPPALITFGG----	
CBH 8E light CDR 3	(1)	QQSFSTSAMITFGQ----	
CBH 11 light CDR 3	(1)	--QHYSSSSWITFGQ----	
CBH 17 light CDR 3	(1)	--QVWNNTNNHRGSSEL	
Consensus	(1)	QLYGNSRWT	

**Comparison of deduced amino acid sequences  
of CBHs Light chain genes with ID 6**

**CDR 1**

	(1)	<u>1</u>	<u>14</u>
light chain seq ID 6 CDR 1	(1)	-RASQSVNKYLA--	
CBH 2 light CDR 1	(1)	-RASQRVLGYLE--	
CBH 4B light CDR 1	(1)	-RASQSVSSTYVA-	
CBH 4D light CDR 1	(1)	TGTSSDIGGYNFVS	
CBH 4G light CDR 1	(1)	-RASQGIDNFLA--	
CBH 5 light CDR 1	(1)	---RASQSSWLA--	
CBH 7 light CDR 1	(1)	--RSQSISFLN--	
CBH 8C light CDR 1	(1)	-RASQSISRYLA--	
CBH 8E light CDR 1	(1)	-RASQTINRYLN--	
CBH 11 light CDR 1	(1)	-RASQSINLWLA--	
CBH 17 light CDR 1	(1)	--REPNIQTNSVH-	
Consensus (1)		RASQSVNKYLA	

**CDR 2**

	(1)	<u>1</u>	<u>7</u>
light chain seq ID 6 CDR 2	(1)	DASNRAT	
CBH 2 light CDR 2	(1)	-GVSRAT	
CBH 4B light CDR 2	(1)	DASIRAT	
CBH 4D light CDR 2	(1)	EVSKRPS	
CBH 4G light CDR 2	(1)	AASSLQS	
CBH 5 light CDR 2	(1)	KASNVOD	
CBH 7 light CDR 2	(1)	AASSLQS	
CBH 8C light CDR 2	(1)	DTSNRAT	
CBH 8E light CDR 2	(1)	AASSLQS	
CBH 11 light CDR 2	(1)	KTSTSES	
CBH 17 light CDR 2	(1)	-YDDRPS	
Consensus(1)		DASNRAT	

**CDR 3**

	(1)	<u>1</u>	<u>17</u>
light chain seq ID 6 CDR 3	(1)	QQRSDWVT-----	
CBH 2 light CDR 3	(1)	--QQYGTSPFTFG----	
CBH 4B light CDR 3	(1)	---QYGGSPFFGG----	
CBH 4D light CDR 3	(1)	SSYINNITPVIFGG----	
CBH 4G light CDR 3	(1)	--QKYNAPFTFGP----	
CBH 5 light CDR 3	(1)	--QYNNFSGTFCQ----	
CBH 7 light CDR 3	(1)	--QSYSPLLTFGG----	
CBH 8C light CDR 3	(1)	QQRSNWPPALTFCG----	
CBH 8E light CDR 3	(1)	QQSFTSAMYTFGQ----	
CBH 11 light CDR 3	(1)	--QHYSSSWTFGQ----	
CBH 17 light CDR 3	(1)	--QVWNNTNHRSSEL	
Consensus (1)		QQRSDWVT	

### Comparison of deduced amino acid sequences of CBHs Light chain genes with ID 7

#### CDR 1

	(1)	<u>1</u> <span style="float: right;">14</span>
light chain seq ID 7 CDR 1	(1)	GASQSVRSNYLA--
CBH 2 light CDR 1	(1)	-RASQRVLGYLE--
CBH 4B light CDR 1	(1)	RASQSVSSTYVA--
CBH 4D light CDR 1	(1)	TGTSSDIGGYNFVS
CBH 4G light CDR 1	(1)	-RASQGIDNFLA--
CBH 5 light CDR 1	(1)	---RASQSSWLA--
CBH 7 light CDR 1	(1)	--RSQSISSFLN--
CBH 8C light CDR 1	(1)	-RASQISRYLA--
CBH 8E light CDR 1	(1)	-RASQTINRYLN--
CBH 11 light CDR 1	(1)	-RASQSINLWLA--
CBH 17 light CDR 1	(1)	--REPNIQTNSVH-
Consensus	(1)	GASQSVRSNYLA

#### CDR 2

	(1)	<u>1</u> <span style="float: right;">7</span>
light chain seq ID 7 CDR 2	(1)	GVSSRAT
CBH 2 light CDR 2	(1)	-GVSRAT
CBH 4B light CDR 2	(1)	DASIRAT
CBH 4D light CDR 2	(1)	EVS KRPS
CBH 4G light CDR 2	(1)	AASSLQS
CBH 5 light CDR 2	(1)	KASNVQD
CBH 7 light CDR 2	(1)	AASSLQS
CBH 8C light CDR 2	(1)	DTSNRAT
CBH 8E light CDR 2	(1)	AASSLQS
CBH 11 light CDR 2	(1)	KTSTSES
CBH 17 light CDR 2	(1)	-YDDRPS
Consensus	(1)	GVSSRAT

#### CDR 3

	(1)	<u>1</u> <span style="float: right;">15</span>
light chain seq ID 7 CDR 3	(1)	QQYGSSPRT-----
CBH 2 light CDR 3	(1)	QQYGTSPFTFG----
CBH 4B light CDR 3	(1)	QQYGGSPFFGG----
CBH 4D light CDR 3	(1)	SSYTNNITPVIFGG-
CBH 4G light CDR 3	(1)	--QKYNAPFTFGP-
CBH 5 light CDR 3	(1)	--QYNNFSGTFGQ-
CBH 7 light CDR 3	(1)	--QQSYSPLLTFGG-
CBH 8C light CDR 3	(1)	QQRSNWPPALTFGG-
CBH 8E light CDR 3	(1)	QQSFSTSAMVTFGQ-
CBH 11 light CDR 3	(1)	--QHYSSSWTFGQ-
CBH 17 light CDR 3	(1)	QVWNNNTNNHRGSSEL
Consensus	(1)	QQYGSSPRT

**Comparison of deduced amino acid sequences  
of CBHs Light chain genes with ID 8**

**CDR 1**  
(1) 1 14

light chain seq ID 8 CDR 1 (1) -RASQSVGNNLA--  
 CBH 2 light CDR 1 (1) -RASQRVLGYLE--  
 CBH 4B light CDR 1 (1) -RASQSVSSTYVA-  
 CBH 4D light CDR 1 (1) TGTSSDIGGYNFVS  
 CBH 4G light CDR 1 (1) -RASQGIDNFLA--  
 CBH 5 light CDR 1 (1) -RASQSSWLA----  
 CBH 7 light CDR 1 (1) --RSQSISSEFLN--  
 CBH 8C light CDR 1 (1) -RASQSISRYLE--  
 CBH 8E light CDR 1 (1) -RASQTINRYLN--  
 CBH 11 light CDR 1 (1) -RASQSINLWLA--  
 CBH 17 light CDR 1 (1) --REPNI GTNSVH-  
 Consensus (1) RASQSVGNNLA

**CDR 2**  
(1) 1 7

light chain seq ID 8 CDR 2(1) GGNT RAT  
 CBH 2 light CDR 2(1) -GVSRAT  
 CBH 4B light CDR 2(1) DASIRAT  
 CBH 4D light CDR 2(1) EVSKRPS  
 CBH 4G light CDR 2(1) AASSLQS  
 CBH 5 light CDR 2(1) KASNVQD  
 CBH 7 light CDR 2(1) AASSLQS  
 CBH 8C light CDR 2(1) DTSNRAT  
 CBH 8E light CDR 2(1) AASSLQS  
 CBH 11 light CDR 2(1) KTSTSES  
 CBH 17 light CDR 2(1) -YDDRPS  
 Consensus(1) GGNT RAT

**CDR 3**  
(1) 1 15

light chain seq ID 8 CDR 3 (1) QHYSTWPLT-----  
 CBH 2 light CDR 3 (1) QQYGTSPFTFG----  
 CBH 4B light CDR 3 (1) QQYGGSPFFGG----  
 CBH 4D light CDR 3 (1) SSYTNNITPVIFGG-  
 CBH 4G light CDR 3 (1) QKYN SAPFTFGP---  
 CBH 5 light CDR 3 (1) QYYNNFSGTIFGQ---  
 CBH 7 light CDR 3 (1) --QQSYSPLLTFGG-  
 CBH 8C light CDR 3 (1) QQRSNWPPALTFGG-  
 CBH 8E light CDR 3 (1) QQSFTSAMYTFGQ-  
 CBH 11 light CDR 3 (1) QHYSSSSWTFGQ---  
 CBH 17 light CDR 3 (1) QVWNNNTNNHRGSSEL  
 Consensus (1) QHYSTWPLT